Claims

1. A reciprocating saw comprising:

a housing;

a plunger in the housing for exteriorly mounting a saw blade;

a driving gear connected to a driving mechanism;

a first eccentric shaft and a second eccentric shaft disposed on the driving gear;

a link member a rear end portion of which is connected to the first eccentric shaft and a front end portion of which is pivotally connected to a rear end portion of the plunger;

a pushing member a rear end portion of which is rotatably connected to the second eccentric shaft;

a lifting member pivotally connected to the housing,

characterized in that:

the lifting member contacts a front end portion of the pushing member and a sleeve bearing disposed on a rear end portion of the plunger, wherein an angle formed between lines through a central axis of the first eccentric shaft, a central axis of the driving gear and a central axis of the second eccentric shaft is obtuse, wherein the lines lie in a plane which is perpendicular to the first eccentric shaft.

2. A reciprocating saw as claimed in claim 1, wherein a front end portion of the pushing member bears against a lower rear end portion of the lifting member and an upper front end portion of the lifting member bears against the sleeve bearing.

3. A reciprocating saw as claimed in claim 1 further comprising: a spring between the housing and the sleeve bearing for biasing the lifting member against the pushing member.

4. A reciprocating saw as claimed in claim 1, wherein the first eccentric shaft and the second eccentric shaft are respectively provided on the top surface and the bottom surface of the driving gear.

5. A reciprocating saw comprising:

an elongate housing;

a bearing having an exterior radial connecting pin;

a linearly reciprocative plunger extending internally along the elongate housing, said linearly reciprocative plunger having a trailing end portion and a leading end portion, wherein said linearly reciprocative plunger at or near to the trailing end portion is journalled within the bearing;

a saw blade exteriorly connected to the leading end portion of the linearly reciprocative plunger;

a rotary driving gear upon which are eccentrically disposed a first elongate shaft and a second elongate shaft, wherein an angle formed between lines through a central axis of the first elongate shaft, a central axis of the rotary driving gear and a central axis of the second elongate shaft is obtuse, wherein the lines lie in a plane which is perpendicular to the first elongate shaft;

a link member having a first end and a second end, the first end of the link member being mounted radially on the first elongate shaft and the second end being coupled radially to the trailing end portion of the linearly reciprocative plunger, wherein in use the link member is linearly reciprocative in response to the rotation of the rotary driving gear;

a push rod having a first end portion and a second end portion, wherein the first end portion of the push rod is mounted radially on the second elongate shaft and the push rod is linearly reciprocative in response to the rotation of the rotary driving gear in an opposing direction to the link member;

a rocker pivotally mounted transversally on the elongate housing adjacent to the trailing end portion of the linearly reciprocative plunger, said rocker having a first end portion and a second end portion, wherein the first end portion of the rocker is in contact with the second end portion of the push rod and the second end portion of the rocker is engaged with the exterior radial connecting pin such that linear reciprocation of the push rod causes the rocker to pivot reciprocatively on the housing thereby causing the second end portion of the rocker to reciprocatively displace the exterior radial connecting pin substantially transversally thereby reciprocatively displacing the trailing end portion of the linearly reciprocative plunger substantially transversally; and

a pivot member mounted in the elongate housing at or near to the leading end portion of the linearly reciprocative plunger about which the substantially transversally displaced trailing end portion of the linearly reciprocative plunger pivots

thereby substantially transversally displacing the saw blade in an opposing transverse direction.

6. A reciprocating saw as claimed in claim 5 further comprising: a biasing member between the elongate housing and the sleeve bearing for biasing the lifting member against the pushing member.

7. A reciprocating saw as claimed in claim 5, wherein the first elongate shaft and the second elongate shaft are respectively disposed on the upper surface and lower surface of the driving gear.

8. A reciprocating saw as claimed in claim 5 wherein the rocker adopts a cradle-like configuration with a pair of substantially L-shaped bodies connected in parallel spaced apart relationship by a connecting portion, wherein each L-shaped body comprises a leg, an arm and an aperture at the intersection of the arm and leg, wherein the legs together define the first end portion of the rocker, the arms together define the second end portion of the rocker, the apertures are collinear for receiving a connecting pin fixed transversally to opposing faces of the elongate housing for pivotally mounting the rocker on the elongate housing.